

CLAIMS

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1. A screening module for a vibratory screen deck including a screen support member releasably securable to said screen deck and having a peripheral frame and an intermediate strut therewithin, and a polymeric screen member releasably engaged by snap-in connection with each of said peripheral frame portion and said intermediate strut, said intermediate strut being located whereby flex of said polymeric screen member is controlled.
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2. A screening module according to claim 1, wherein said screen support member includes an integral stiffening frame and intermediate strut core of rigid construction over which is moulded plastics material.
 3. A screening module according to claim 2, wherein said core is of metal construction.
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4. A screening module according to any one of claims 2 and 3, wherein said moulded plastics material is polyurethane.
 5. A screening module according to any one of the preceding claims, wherein said screen support member is configured whereby the length thereof is selected to span adjacent support rails of a conventional screening deck.
 6. A screening module according to claim 5, wherein said screen support frame be secured to the support rails by securing means selected to provide both intimate attachment of the screen support frame to the supporting rails as well as interconnection between adjacent modules on the screen deck.
 7. A screening module according to claim 6, wherein said securing means includes the screen support frames being provided with end portions configured to accept fastenings that interconnect adjacent screen support frames to said support rails as well as securing the adjacent screen support frames together.

8. A screening module according to claim 7, wherein said the securing means is selected whereby the securing means does not extend above the surface of the screening panels in use, whereby an uninterrupted screening surface may be maintained.
9. A screening module according to claim 8, wherein said securing means is adapted to be installed before said screening panels are installed on the screen support members whereby the screen panels may overlie the securing means.
10. A screening module according to any one of the preceding claims, wherein said intermediate strut takes the form of one or more strut portions extending from the periphery of the screen support member, whereby the maximum unsupported span of the screen panel is reduced to control screening grade.
11. A screening module according to claim 10, wherein said intermediate strut take the form of an orthogonal array of strut portions disposed between the opposed sides and opposed ends of the screen support member to reduce the open area of the support member to panes.
12. A screening module according to claim 11, wherein said intermediate strut is of lesser plan cross-section than the necessary cross-section of the peripheral frame or other frame element necessary to support the periphery of the screen panel.
13. A screening module according to claim 5, wherein said screen support member is configured to accept two or more screen panels.
14. A screening module according to claim 13, wherein said screen support member supports two screen panels of square symmetry in abutting relation.

15. ~~A screening module according to claim 14, wherein said screen support member is provided with a transverse screen panel mounting portion dividing the screen support frame into peripherally supporting panes for said screen panels.~~
16. ~~A screening module according to any one of the preceding claims, wherein said screen panels are moulded from polyurethane.~~
17. ~~A screening module according to claim 16, wherein said screen panels are formed whereby they may be readily recycled.~~
18. ~~A screening module according to any one of the preceding claims, whereby the screen panels are sized to be flush-edged with the screen support member in use whereby the assembled screen modules formed therewith may in assembly on a screen deck present a continuous screening surface.~~
19. ~~A screening module according to any one of the preceding claims, wherein said snap-in connection comprises complementary snap-in components formed integrally with the respective screen support member portions and the screen panels.~~
20. ~~A screening module according to claim 19, wherein said snap-in connection is selected whereby the snap-in connection is universal for connecting the screen panel to the screen support member in any selected orientation.~~
21. ~~A screening module according to any one of claims 19 and 20, wherein said snap-in component on the screen support member includes an upstanding ridge extending about the periphery of a screen panel mounting portion of the screen support member the ridge having on its outward facing surface a peripheral groove, the corresponding snap-in component of the screen panel including a reentrant channel having a ridge adapted to engage the groove on the screen support member when the channel is deformed thereover.~~

22. A screening module according to claim 21, wherein the shape and dimensions of the respective ridges and channel are selected such that any intermediate support portion of the screen support accommodates the snap-in components of adjacent screening panels whereby the panels are retained in close mutual abutment.

23. A screening module according to any one of claims 21 and 22, wherein the peripheral groove of the upstanding ridge is supplemented by an undercut on the inner periphery of the upstanding ridge, whereby the reentrant channel may engage both the undercut and the peripheral groove.

24. A screening module according to any one of the preceding claims, wherein the snap-in connection between the intermediate strut and the screen panel comprises a profiled upstanding ridge provided on the intermediate strut and adapted to engage a corresponding profile groove formed integrally with the screen panel.

25. A screening module according to claim 24, wherein one of said profiled upstanding ridge and said profiled groove is interrupted whereby said snap-in connection is relieved at points of intersection of the strut with the frame of the support member.

26. A screening module according to any one of the preceding claims, wherein the plan area of the peripheral frame and intermediate strut and their respective snap in connections with the screen panel are selected whereby the effective screening area is at least 75% of the total area of the screen modules.

27. A method of mounting screening modules to a support rail of a screen deck including the steps of:-

providing the screening module with an end portion adapted to overlies a support rail of a screening deck and having a recess formed therein defining a shoulder, said shoulder having a locating groove;

abutting said module recess-to-recess with an adjacent module on said support rail,

inserting into said recess a collet adapted to coact with said locating groove and the corresponding locating groove of the adjacent screening module to locate said screening modules in abutment; and

fastening said modules with fastening means adapted to cooperate with said collet to secure said modules to the support rail.

28. A screening module including:-
- an end portion adapted to overlie a support rail of a screening deck;
 - a recess formed in said end portion and defining a shoulder;
 - a locating groove formed on said shoulder;
 - a collet adapted to coact with said locating groove and the corresponding locating groove of an adjacent screening module to locate said screening modules in abutment; and
 - fastening means adapted to cooperate with said collet to secure said modules to the support rail.
29. A screening module according to claim 28, wherein said end portion includes a metal cored moulded polyurethane section and wherein the recess is moulded in the polyurethane about a relieved portion of the metal core.
30. A screening module according to claim 29, wherein the recess is of sufficient depth to accommodate the fastening means whereby in use the fastening is wholly located beneath the screen surface.
31. A screening module according to any one of claims 28 to 30, wherein the locating groove is in the form of an arcuate groove in the shoulder, the apex of which is disposed to the side of the fastening away from the abutment with the adjacent panel.

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32. A screening module according to claim 31, wherein the recess is substantially semicircular in plan and the locating groove comprises an arcuate groove substantially coaxial with the recess.
33. A screening module according to claim 32, wherein said locating groove is of a section whereby mutual engagement of the collet with the grooves of the adjacent modules serves to urge the modules into abutment and alignment.
34. A screening module according to claim 33, wherein said locating groove is provided with at least one ramped face against which the collet may act to provide alignment and abutment of the modules.
35. Screening apparatus including a screen deck and a plurality of abutting screening modules in removable attachment therewith to form a substantially contiguous screening surface, each said screening module including a screen support member having a peripheral frame and an intermediate strut therewithin, and a polymeric screen member releasably engaged by snap-in connection with each of said peripheral frame portion and said intermediate strut, said intermediate strut being located whereby flex of said polymeric screen member is controlled, said removable attachment including an end portion of said screen support member adapted to overlie a support rail of said screening deck, a recess formed in said end portion and defining a shoulder, a locating groove formed on said shoulder, a collet adapted to coact with said locating groove and the corresponding locating groove of an adjacent screening module to locate said screening modules in abutment, and fastening means adapted to cooperate with said collet to secure said modules to the support rail.